

DOCUMENT RESUME

ED 213 722

TM 810 795

TITLE A Report to the Board of Education of the Corvallis School District. Achievement Testing, 1979-80 School Year.

INSTITUTION Corvallis School District 509J, Oreg.

PUB DATE [80]

NOTE 31p.; Portions of the appendix have been removed due to copyright restrictions.

EDRS PRICE MF01/PC02 Plus Postage.

DESCRIPTORS Academic Achievement; *Achievement Tests; *Comparative Analysis; Educational Assessment; Elementary Secondary Education; *School Districts; *Scores; *Testing Programs

IDENTIFIERS *Comprehensive Tests of Basic Skills; *Corvallis School District OR

ABSTRACT

The Comprehensive Tests of Basic Skills (CTBS) was administered to pupils in Grades 2 through 7, 9 and 11 during the 1979-80 school year as part of the Corvallis School District's testing program. Results of the CTBS, herein expressed as mean (average) percentile rank scores from each of the grades tested, are compared with those of prior years. Information on the interpretation of these findings is provided. Scores well above the national norm are reported. The highlights of the 1979-80 testing with the CTBS are briefly analyzed. The Corvallis School District's testing program allows for year-to-year comparison of student achievement. This level of continuity also helps teachers and curriculum analysts to study the year-to-year indications of strengths and weaknesses in school programs. The testing program, although important, is seen as only one measure of how well a school program is succeeding.

(Author/AL)

* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *

A REPORT TO THE BOARD OF EDUCATION OF THE
CORVALLIS SCHOOL DISTRICT

F.E. Quale

ACHIEVEMENT TESTING
1979-80 SCHOOL YEAR

TO THE EDUCATIONAL RESOURCES
INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)

☐ This document has been reproduced as
received from the person or organization
originating it.
☒ Minor changes have been made to improve
reproduction quality.

• Points of view or opinions stated in this docu-
ment do not necessarily represent official NIE
position or policy.

This report compares the results of the Comprehensive Tests of Basic Skills (CTBS) for the current year with prior years and provides information on the interpretation of these findings.

Who Is Being Tested?

The Corvallis School District's testing program is unique in that we test at each of the grade levels, thus providing a very comprehensive program which allows for year-to-year comparison of student achievement. This level of continuity also helps teachers and curriculum analysts to study the year-to-year indications of strengths and weaknesses in school programs. This year students were tested on the CTBS in the month of January in grades two, three, four, five, six, and seven. The ninth and eleventh grade students were administered the tests in November and December. Students in the eighth and tenth grades were administered aptitude tests (DAT) for career and educational guidance purposes in November and January.

What Does the CTBS Measure?

The CTBS covers three basic curriculum areas, namely, reading, language (English), and arithmetic. Each subject area is divided into a number of subtests that measure specific skills required for proficiency in that subject. In addition, tests to measure science, social studies, and reference skills are used at certain grade levels. The names of the subtests and what they attempt to measure are listed in the Appendix of this report.

Are These Tests Appropriate for Our District?

A word of caution about the advantages and limitations of standardized achievement tests would be appropriate at this point. The publishers have designed tests such as the CTBS to be used on a nationwide basis, using test items that have to reflect broad curricular areas rather than specific instructional programs. It is unlikely that tests now on the market would match the sequence of instruction in this school district. Even if we were very careful in the selection of a test to match curricular content, the length of most standardized tests would not be long enough to provide coverage of our instructional goals. The arithmetic computation subtest of the CTBS is forty items in length, the longest in the battery. However, in a typical math program, there are something like two hundred and fifty instructional objectives to be measured. Thus it would be impossible to test every objective--choices have to be made and test items used that represent, rather than totally cover, the subject matter.

ED213722

TM 810 795

General standardized achievement tests, such as the CTBS, give a broad overview of how well groups of students are doing in the areas being tested. The scores provide measures of relative knowledge for comparisons among a student's peers, and can provide information on group performance on individual test items. This type of "item analysis" is often used for pointing out strengths and weaknesses in a particular subject area.

How Are the Scores Interpreted?

Scores on the CTBS are reported in terms of percentiles. Percentiles rank students on a scale between the first and the 99th percentile. For example, a percentile rank of 75 means that the person achieving this score achieved higher than 75 percent of others who took the test. It also means that 25 percent scored higher than this score point. The score of 75 has nothing to do with the percent of test questions answered correctly!

A percentile score of 50 is the exact midpoint where one-half of the nationally standardized test group scored above this point, and one-half scored below. When a group of students in one grade level score above this midpoint norm (50), it is an indication that the students are exceeding the national norm established for that test. If we consider the scores achieved by Corvallis students, we find that generally the average score on the various subtests ranges from about 15 to 25 percentile points above the norm. When we take a specific score, the 75th percentile, for example, Corvallis has approximately 50 percent of its students above this point whereas the national norm group only had 25 percent. Because of the way test scores distribute themselves under the normal curve, a slight change in the mean (average) score at these higher percentile scores can cause a shift of several percentage points, either up or down. At the midpoint of the distribution of scores, around the 50th percentile, the score changes may only cause a change of one point in the percentile rank.

One caution must be observed when we use norm scores to describe group performance. If for instance we calculated an average of the percentile scores of individual students, this number would not reflect the percentile of the school's average when compared to other schools. In order to have this information, the publisher would have to calculate the average raw score for each school using the CTBS and then compute a percentile ranking of schools. Few test developers do this. It is probably more accurate to say that a school achieving a group mean at the 75th percentile is probably in the top ten percent of schools nationally.

Are the Tests Reliable?

On occasion, the tests have been blamed as being inconsistent, or unresponsive to the District's emphasis. Before a test can even be published, it must pass rigorous tests of its own to determine if it is really measuring what it purports to measure, and that items within the tests are not ambiguous or misleading, so as to lower the reliability. Test experts use very sophisticated methods to make sure that test items are representative of varying levels of difficulty. 3

Individual test scores are typically not as reliable as the larger group scores. There are many factors that account for this, but when all the individual scores are put together the resulting group score becomes more accurate as a measure for program analysis and monitoring purposes.

Are Tests the Only Answer to Educational Assessment?

The importance of the testing program must not be exaggerated to the point where it seems to be the only measure of how well the school program is succeeding. There are many other factors that have an even greater relationship to student achievement than test scores. The number of graduating seniors to receive high honors and scholarships must assume a high priority. An actual count or percentage of seniors accepted into colleges and universities provides another indicator. Although grade point averages seem to have less reliability than they did in former years, they still provide an indication of the teacher's judgment concerning the quality of students passing through the classrooms. Perhaps the most difficult to measure are the long term effects of a successful school program that provides a student with the necessary education to adapt to the requirements of society. In this realm are the "solid citizens" of tomorrow who assume their responsibility in a mature, intelligent fashion. Possible measurement of this kind of success could be related to factors concerned with career attainment, voting records, the absence of unlawful acts performed, involvement in community activities, successful parenting, concern for the environment, etc.

Over the years there has been positive evidence that standardized testing is a useful tool for the assessment of student achievement. Used properly, and with cautious application, the results can be supportive of successful programs and helpful in pointing out the need to provide greater support to other programs needing increased attention.

DISCUSSION AND COMMENT

The results of the achievement testing for the school year 1979-80 are contained in the tables and graphs following this section. All results are expressed as mean (average) percentile rank scores from each of the grades tested. Comparisons are shown for consecutive school years when this information was available.

It is pleasant to report scores well above the national norm, i. e., above the scores of the thousands of students who comprised the norming group. Being able to tell what those scores mean in terms of how well the Corvallis School District is meeting the needs of its students is a rather difficult undertaking. Past reports tend to show that a similarity of patterning of scores exists from year to year, and in each year certain highlights seem to come to attention.

Grades 2, 3, and 4

Table 1 and Figures 1 to 12 display the obtained scores for Grades 2, 3, and 4. The second grade made considerable improvement in a number of subtest areas with an average gain of about two and one-half percent for all tests. Gains of five percent were registered for both Reading Comprehension and Language Expression, and surprisingly, a rather dramatic rise of seven percent can be reported for Spelling. However, this was offset by a drop of seven percent in Math Computation, although Math Concepts did show a gain of three percent.

Compared with last year's third grade class, the present group did not fare quite as well, and generally showed an average drop of about two percent for all tests. Losses of three to five percent were found to occur in Reading Vocabulary, Language Mechanics, Spelling, and Math Computation. Other tests stayed at about the same level, except for Reference Skills which advanced by two percent.

The fourth grade showed inconsequential differences in all subtests of Reading and Language Arts, but suffered some loss in the Math section where Math Computation dropped by six percent and Math Concepts by two percent. For all areas the gains appear to have about equaled the losses at this grade level.

TABLE 1
CTBS District Results - 1978-1979-1980
Comparison of Percentile Rank Scores
Grades 2 - 3 - 4

	Grade 2			Grade 3			Grade 4		
	1978	1979	1980	1978	1979	1980	1978	1979	1980
<u>Reading</u>									
Vocabulary	73	68	72	79	82	79	82	77	76
Comprehension	68	65	70	75	77	77	76	75	73
Total	74	70	71	79	81	80	80	75	75
<u>Language</u>									
Mechanics	71	70	71	67	70	66	66	62	65
Expression	72	68	73	76	79	79	76	75	77
Spelling	61	55	62	63	66	61	66	60	58
Total	72	68	74	71	74	70	74	68	69
<u>Mathematics</u>									
Computation	72	75	68	64	72	69	66	63	57
Concepts	73	73	76	71	72	70	71	66	64
Application		- N/A -		70	72	70	71	59	61
Total	73	75	70	68	73	72	73	63	61
Reference Skills		- N/A -		73	77	79	74	68	67
Science		- N/A -		- N/A -			- N/A -		
Social Studies		- N/A -		- N/A -			- N/A -		

Grades 5, 6, and 7

In Table 2 and Figures 1 to 14, the scores for the middle grades, 5, 6, and 7, are shown for three consecutive years. Examination of the year to year comparison shows the fifth grade making good gains in Reading and Math, but showing lower scores in Language Expression, Spelling, and Social Studies.

The sixth grade made consistent gains in almost all subjects, but made the greatest gain on Reading Vocabulary (five percent). A slight drop in Math Application occurred where the score declined by two percent.

The seventh grade has shown a changeable pattern in the three years shown. Starting with very high scores (some in the eighties) in 1978, there was a drop in 1979, but it appears that there is some improvement for this year. A gain of three percent in Spelling and Science was about the largest change in either direction for this group.

For the three years recorded for the seventh grade, continuing strength is shown in the Reading Program with Language Arts also making good improvement. All of the obtained scores are still in the higher achievement ranges, encompassing the percentile in the upper sixties and low seventies. Science and Social Studies go above this with scores between 75 and 80 percent.

TABLE 2
CTBS District Results - 1978-1979-1980
Comparison of Percentile Rank Scores
Grades 5 - 6 - 7

<u>Test</u>	<u>Grade 5</u>			<u>Grade 6</u>			<u>Grade 7</u>		
	1978	1979	1980	1978	1979	1980	1978	1979	1980
<u>Reading</u>									
Vocabulary	70	73	77	71	71	76	81	78	76
Comprehension	68	72	74	71	67	70	71	71	70
Total	69	75	77	72	70	74	75	74	73
<u>Language</u>									
Mechanics	60	62	65	65	65	67	65	65	67
Expression	75	78	76	75	75	77	74	70	72
Spelling	56	61	58	54	54	57	69	64	67
Total	66	70	69	67	67	68	71	66	68
<u>Mathematics</u>									
Computation	57	64	70	58	58	59	72	69	69
Concepts	68	72	70	67	67	71	76	76	74
Application	64	64	68	65	65	63	73	69	69
Total	62	67	72	61	61	62	73	70	71
Reference Skills	67	70	74	68	68	71	78	70	72
Science	79	78	78	81	76	79	80	77	80
Social Studies	73	78	75	74	74	77	79	76	75

Grades 9 and 11

In Table 3 and Figure 1 to 14, the ninth and eleventh grade scores are shown. Continued excellence of achievement is evident with scores consistently above the high sixties and seventies for most of the subjects being tested. The variability from year to year is generally much lower than that found in the lower grades. A few noticeable improvements are noted for the ninth grade -- Spelling and Math Concepts improved by five percent. The parallel of scores from 1979 to 1980 for the eleventh grade shows almost no change except for a slight decrease in Reading and Social Studies. Spelling continues to be the lowest scoring area for eleventh graders, but they maintained the same score as last year. However, this is still considerably below the expected potential for students in this district.

TABLE 3
CTBS District Results - 1978-1979-1980
Comparison of Percentile Rank Scores
Grades 9 and 11

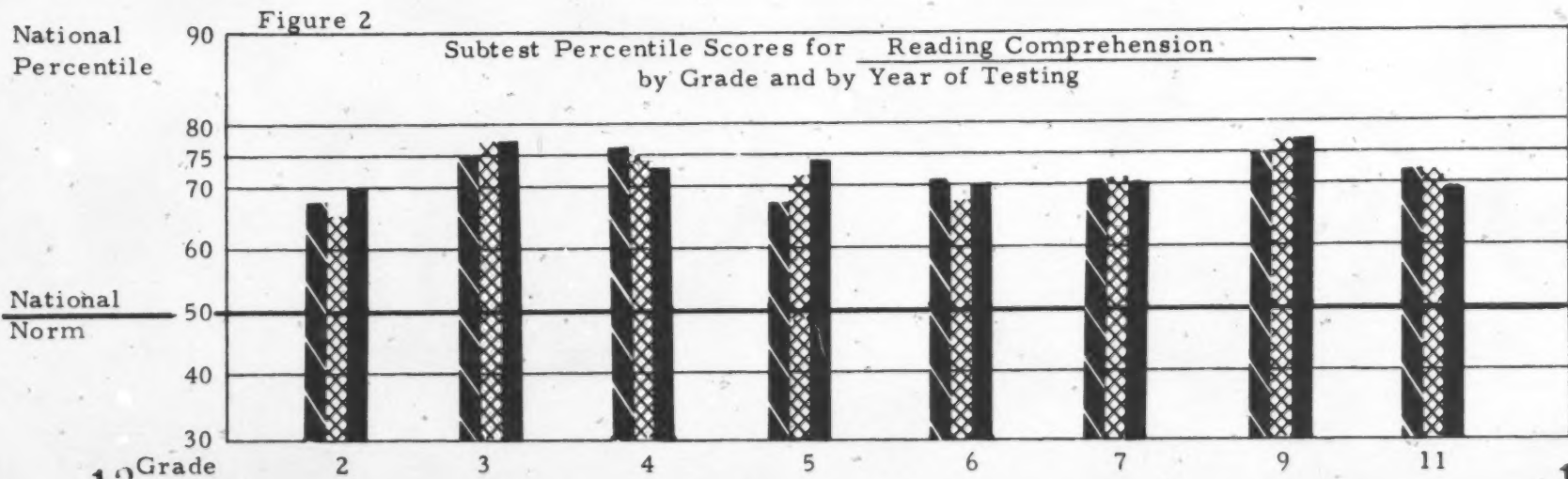
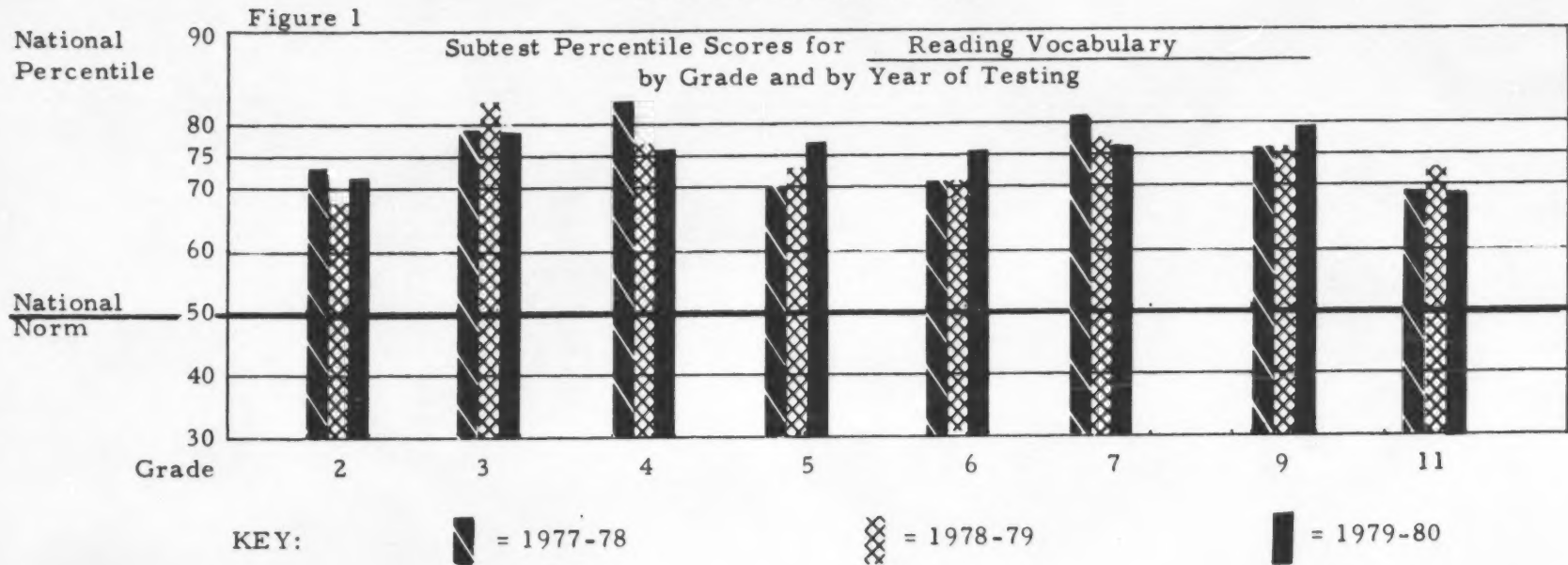
Test	Grade 9			Grade 11		
	1978	1979	1980	1978	1979	1980
<u>Reading</u>						
Vocabulary	76	76	79	69	73	69
Comprehension	75	77	77	72	72	69
Total	77	79	80	73	73	70
<u>Language</u>						
Mechanics	64	73	73	56	66	66
Expression	71	76	76	72	72	72
Spelling	63	63	68	51	57	57
Total	68	73	74	62	67	67
<u>Mathematics</u>						
Computation	72	72	74	58	61	63
Concepts	76	76	81	69	69	69
Application	75	75	75	68	68	68
Total	74	74	75	61	63	64
Reference Skills	77	77	77	71	71	71
Science	79	79	79	76	76	76
Social Studies	77	77	77	76	74	71

SUMMARY

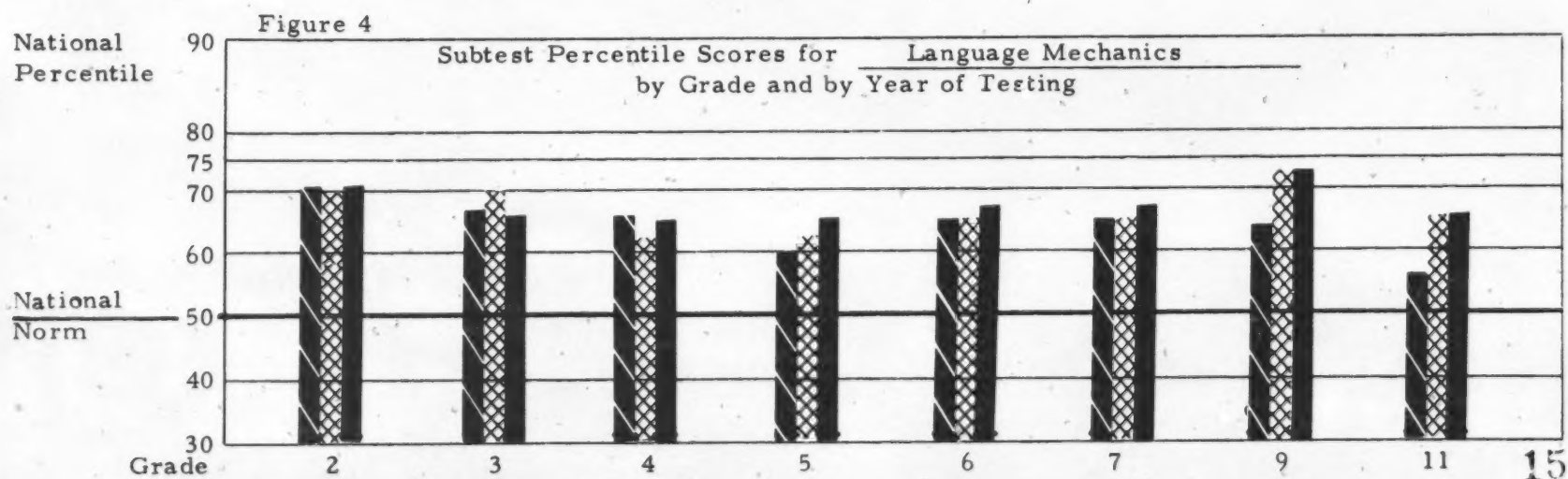
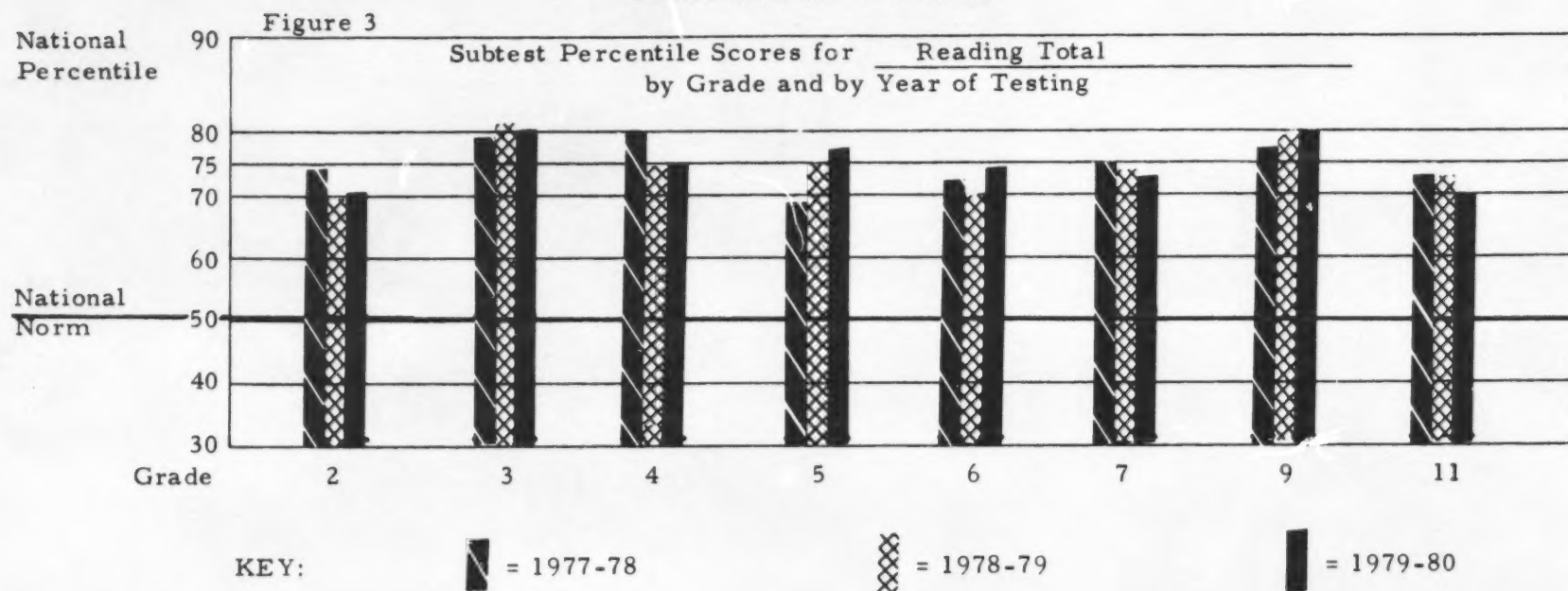
A brief analysis of the highlights of this year's testing with the CTBS includes the following points.

- After the change to a higher level test for fourth grade students two years ago, there is a leveling off now with scores that are more consistent with other grade level scores. The Reading scores are much more realistic, especially, and correlate well with adjacent grades.
- The Language Arts, including Spelling, tend to show greater gains than they have in the past at most grade levels. Spelling shows a pattern of improvement for the majority of grades, albeit still below expectancy for our students. Grades 3, 4, and 5 lost some ground, while the remaining five grades achieved gains of as much as seven percentile points.
- Math still is below the Reading scores at the lower grades but shows considerable gain at the secondary level; e.g., a score at the 81st percentile on Math Concepts at the ninth grade.
- It should be recognized that scores achieved by Corvallis boys and girls between the 65th and 80th percentile has the effect of placing the Corvallis School District among the top ten percent of schools, when compared to the scores achieved by other districts in the United States. There need be little concern on the part of the citizens of this community that Corvallis School District is not graduating students who will be able to hold their own in competition with other students in the nation.

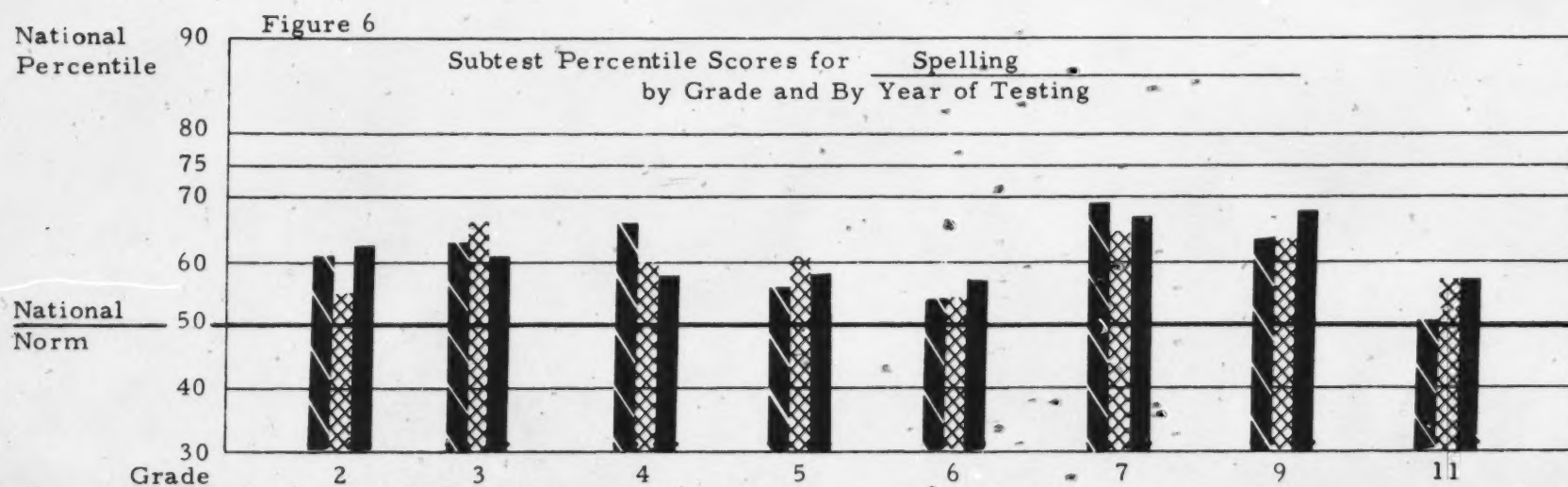
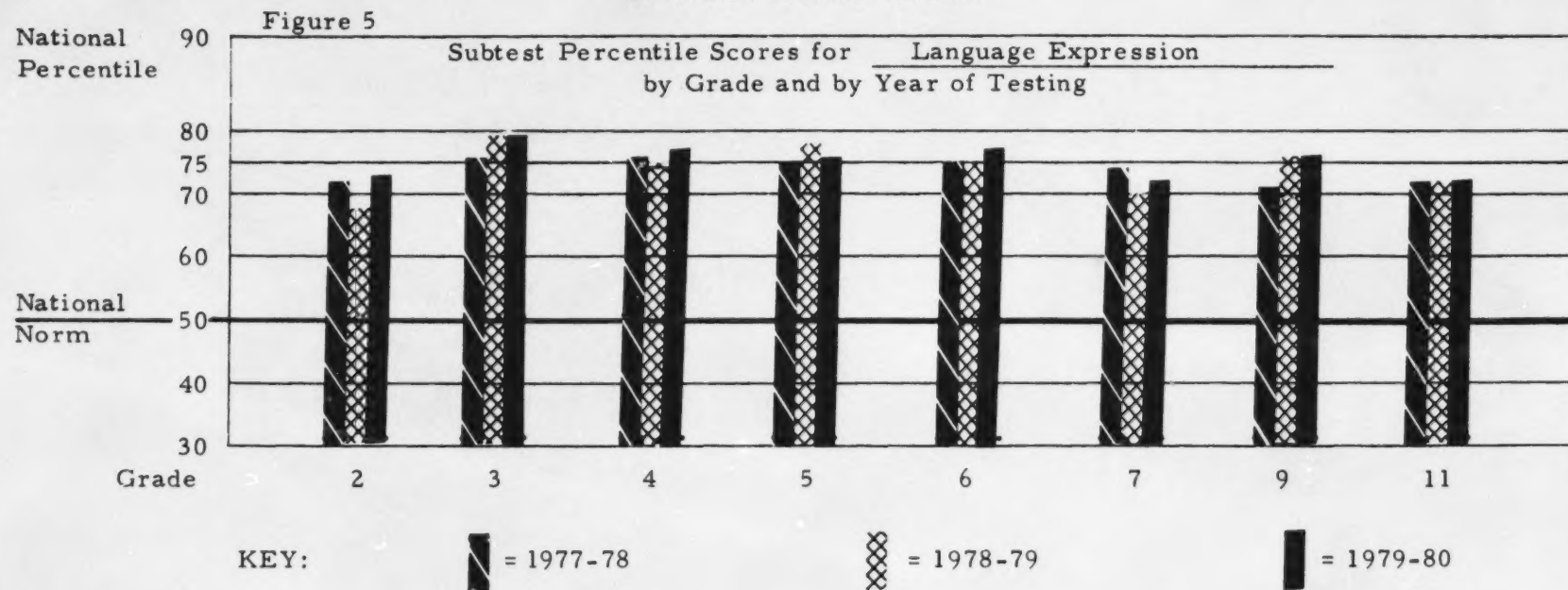
COMPREHENSIVE TESTS OF BASIC SKILLS Combined District Results



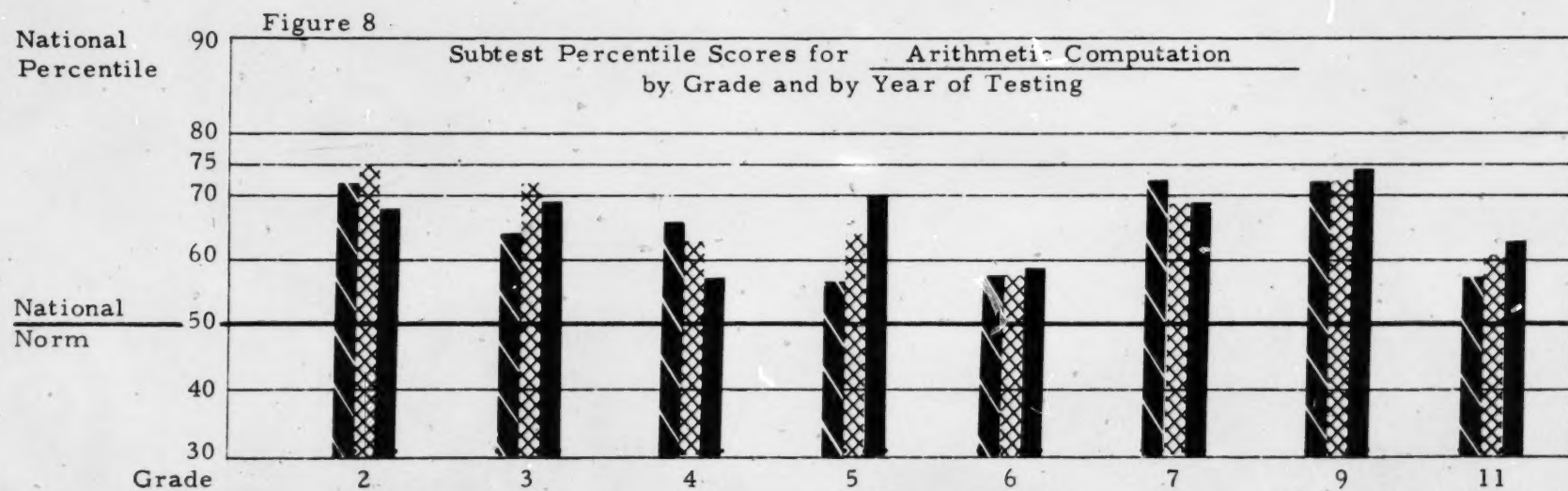
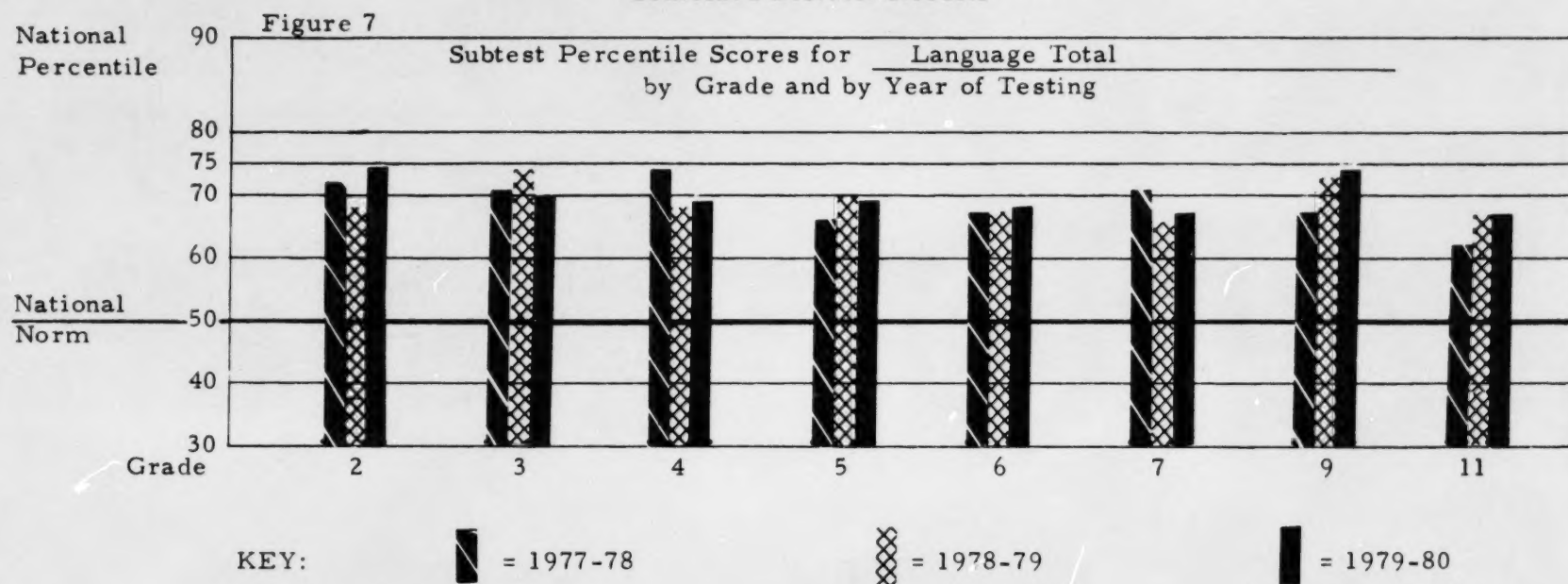
COMPREHENSIVE TESTS OF BASIC SKILLS Combined District Results



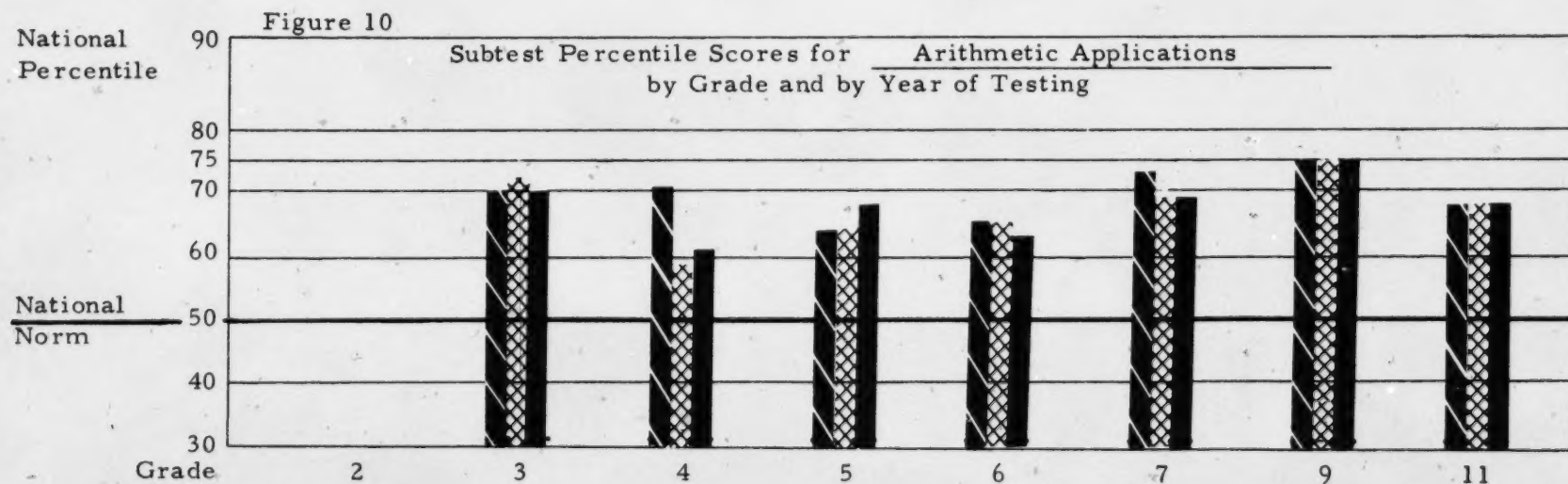
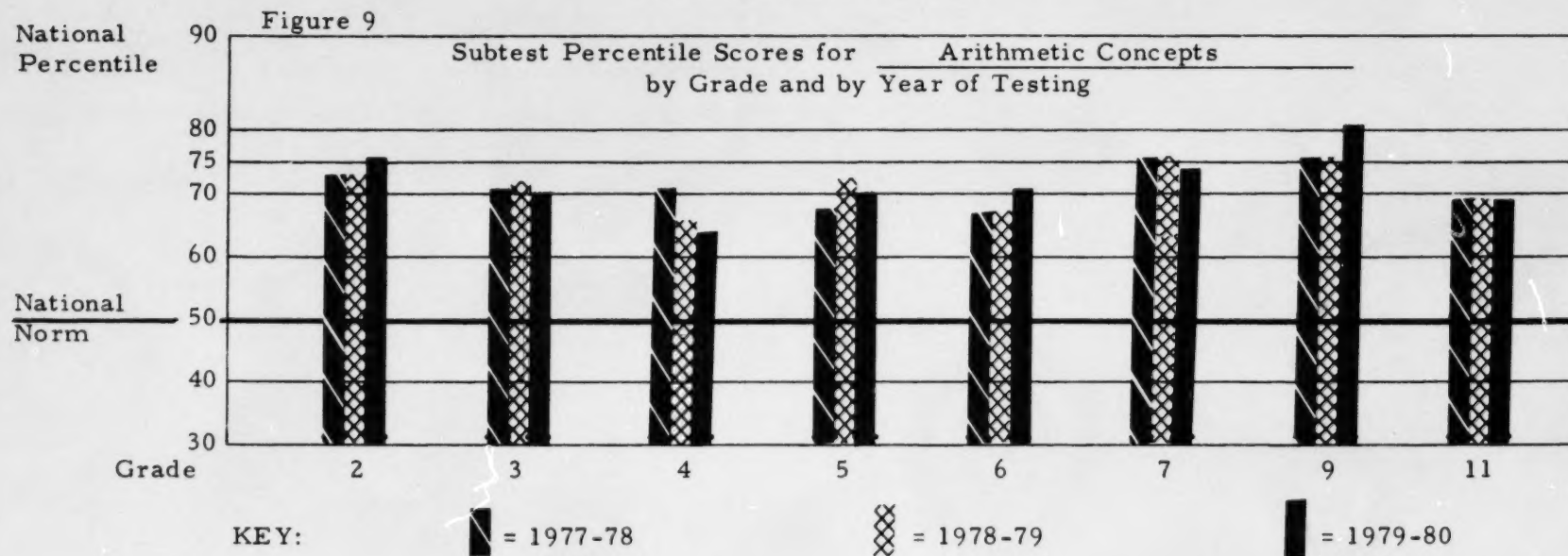
COMPREHENSIVE TESTS OF BASIC SKILLS Combined District Results



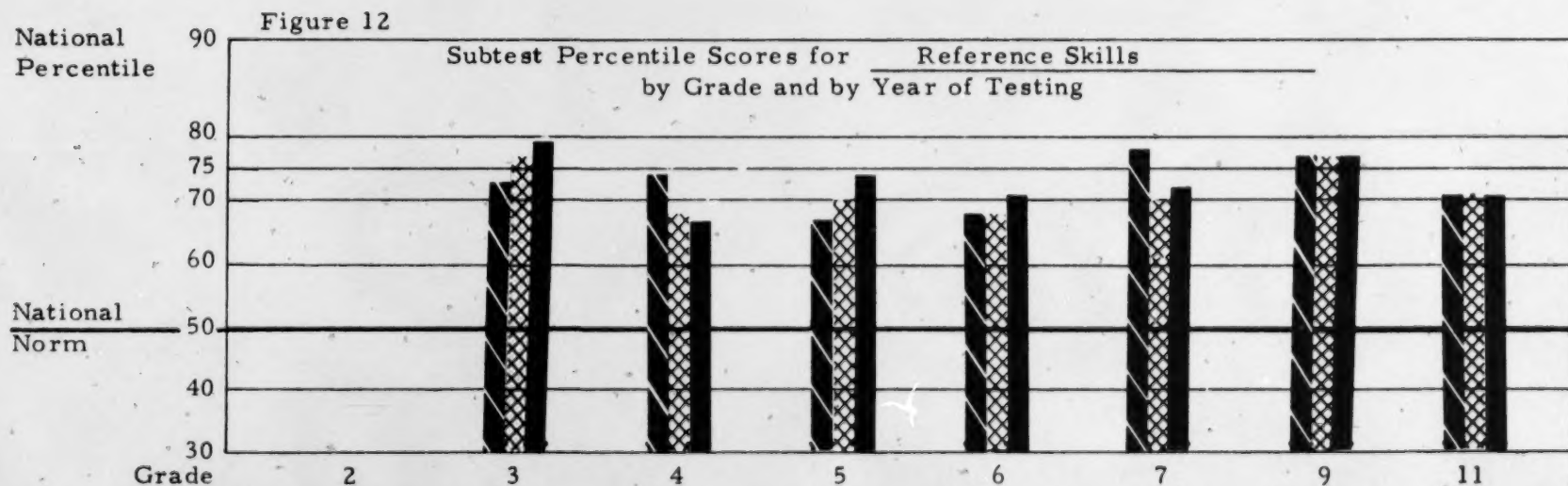
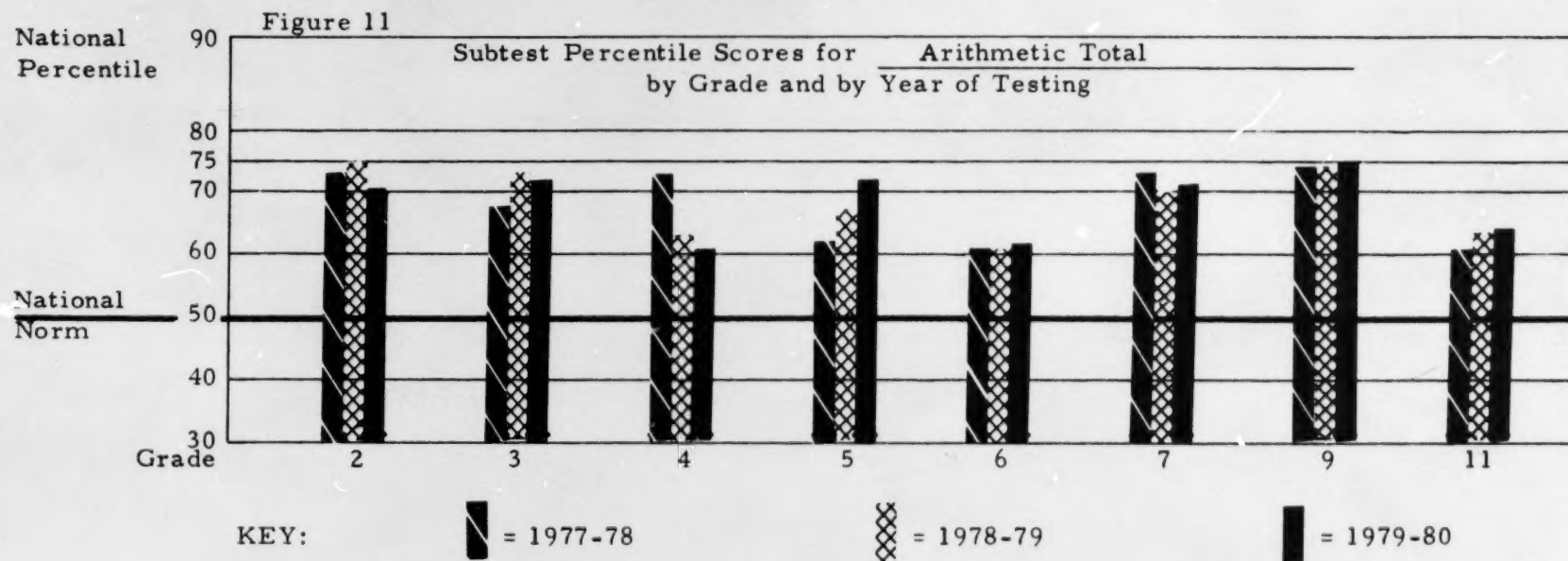
COMPREHENSIVE TESTS OF BASIC SKILLS Combined District Results



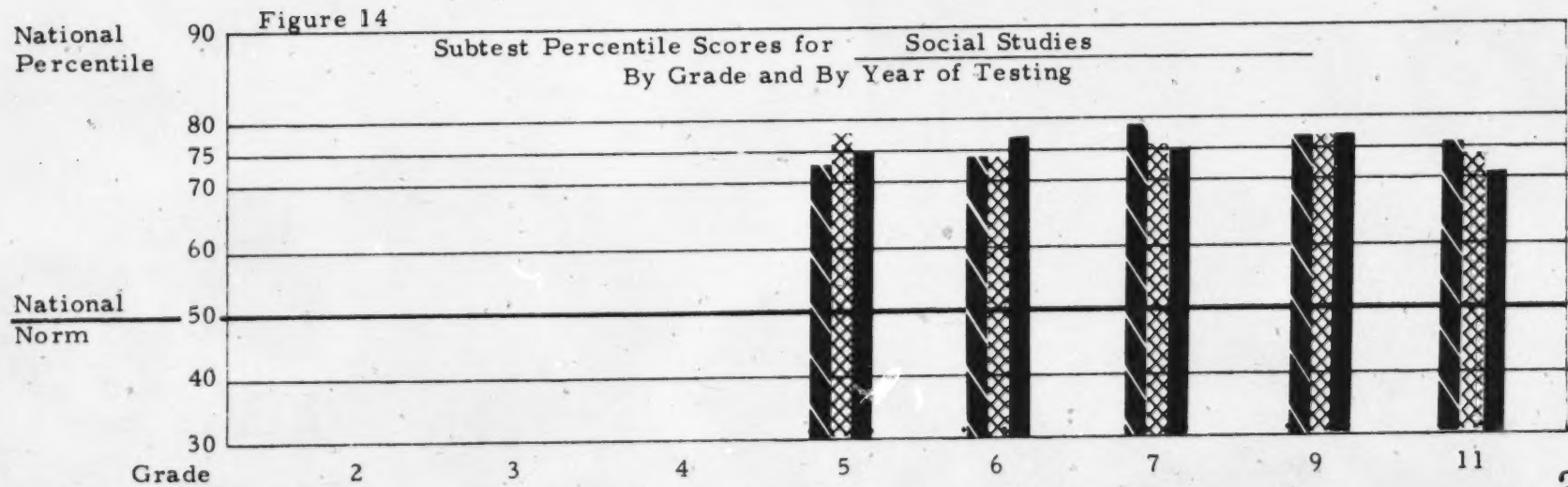
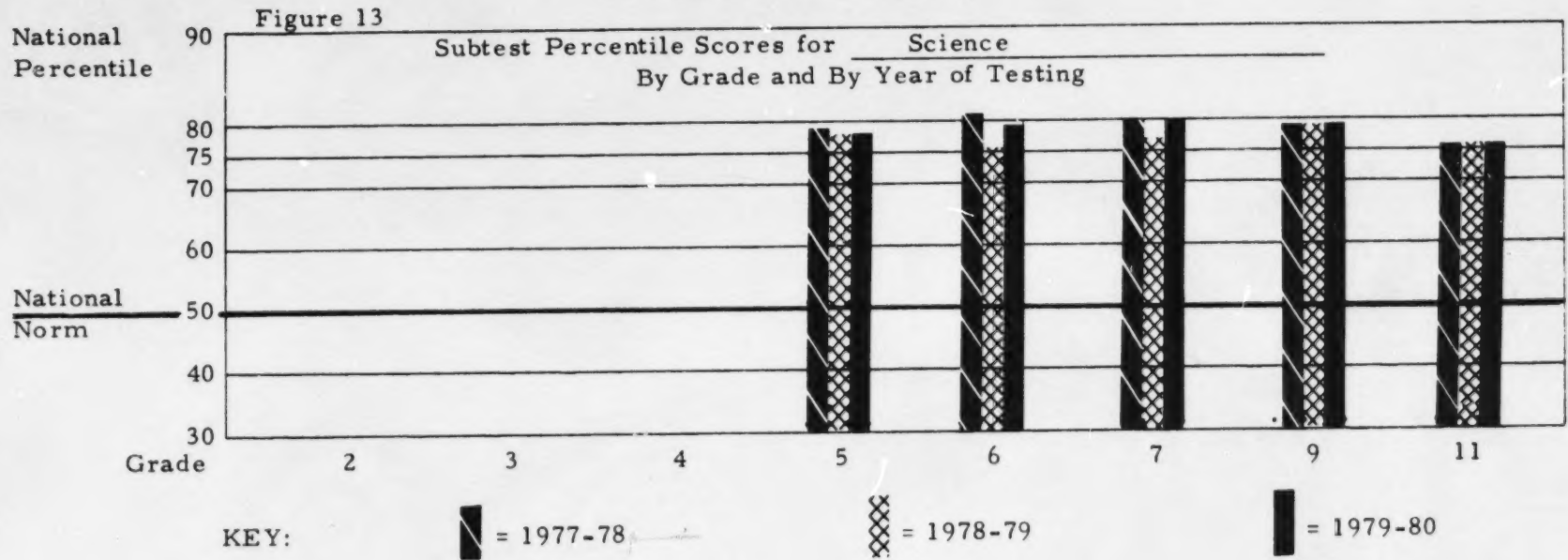
COMPREHENSIVE TESTS OF BASIC SKILLS
Combined District Results



COMPREHENSIVE TESTS OF BASIC SKILLS Combined District Results



COMPREHENSIVE TESTS OF BASIC SKILLS Combined District Results



APPENDICES

Teachers have been able to use test results in a number of ways to assist in improving the instruction of children. The variety of potential uses includes the identifying of special strengths and weaknesses of each child, assisting in administrative decisions in grouping or individualization of programs, examining the relative effectiveness of alternative methods of instruction, and determining appropriate next instructional steps. The information to make these decisions is found in a number of different reports that are generated from the scoring process after the tests are administered. A brief description and example of the reports is presented in the following appendices.

- | | |
|------------|---|
| Appendix A | The Class Roster and Summative Statistics |
| Appendix B | Individual Test Record |
| Appendix C | Right Response and Item Analysis |
| Appendix D | What the CTBS Measures |

Appendix A

The Class Roster and Summative Statistics

This form presents a tabulation of scores achieved by students on each of the subtests of the CTBS. The four scores listed under a specific test title are:

1. The raw score or number of items that were correct;
2. The grade placement score;
3. The local percentile score, i. e., the student's ranking in relation to other Corvallis students;
4. The national percentile score, a comparison to a nationwide norm group.

After the last pupil's name on the class roster, the total group scores are presented, first by total number of males, then females, and then both combined. The same type of summary scores as listed above are used to demonstrate the level of achievement of the students in the grade level tested. With this information teachers and counselors can relate each pupil's scores with comparison groups and determine if scores are consistent with demonstrated classroom performance.

A copy of the computer printout class roster is shown on the following page. The summary statistics are shown at the bottom under the abbreviated headings of the subtests.

Appendix B

The Individual Test Record

This form provides both general information about a student's strengths and weaknesses in large content areas as well as mastery of individual test items. The ITR can be used in conferences with individual students to help them evaluate their own test performance, and to give them a voice in planning their own educational goals. One copy of the ITR is a home report to communicate test results to parents. This copy contains more descriptive paragraphs concerning the interpretation of the test scores.

Sample ITRs of the teacher and parent reports are presented on the following pages showing the type of data derived from the CTBS administration. The teacher's copy is made up of two sections, as follows:

The upper portion presents the names of the subtests and the resulting scores that were obtained from the testing. To the right is a profile of a student's performance plotted in terms of national percentile ranks with a band of Xs representing the student's approximate percentile rank on each test. Because various factors that might affect a student's performance can never be completely controlled, some errors of measurement may be assumed in all test scores. A percentile band represents the range within which a student's theoretical true score probably lies (statistically, this band extends one standard error of measurement above and below the obtained score).

The lower portion of the ITR presents a detailed analysis of how the student responded to each item of each subtest that was administered. With this information in hand, teachers and students can quickly determine where the student needs more help and where mastery of the concepts or skills has been accomplished.

Appendix C

Right Response Summary and Item Analysis

The information printed on this form provides teachers, curriculum planning teams, counselors, and administrators with an analysis of the performance of the students on individual and groups of items in the CTBS. The summary's analysis is divided into subtests, and then subdivided again by specific concepts or skills related to the subtest heading.

For each item in the grade level test (ranging from about 250 to 400 items), the following information is provided about student performance:

1. The percent of students (PCT) answering correctly, incorrectly, or omitting the item;
2. A comparison column showing the percentage of students in the national norm group (publisher's reference group) answering the item correctly. These figures (shown under two grade placement figures) are item value difficulty values for each applicable grade at the time the CTBS was "normed" by the publisher.
3. The difference between the school or class and the norm group's percents correct for each item or item cluster is calculated in the far right hand column.

A sample of the Right Response Summary and Item Analysis Form for one school in the district is presented on the following pages.

Appendix D

Comprehensive Tests of Basic Skills (CTBS)

The tests* attempt to measure the following things:

1. Reading Vocabulary;
How well the student understands the meaning of words.
2. Reading Comprehension;
How well the student understands what is read.
3. Language Mechanics;
How well the student can use correct punctuation and capital letters.
4. Language Expression;
How well the student uses words and phrases to state an idea clearly and in harmony with the rest of a selection.
5. Language Spelling;
How well the student can recognize words which are incorrectly spelled.
6. Arithmetic Computation;
How well the student can add, subtract, multiply, and divide.
7. Arithmetic Concepts;
How well the student can recognize and use ideas about numbers.
8. Arithmetic Applications;
How well the student can use ideas about numbers to solve problems.
9. Study Skills - Reference Materials;
How well the student can find information in the library and in books.
10. Study Skills - Graphic Materials;
How well the student can use maps, graphs, charts, and tables.
11. Science - Facts and Concepts;
How well the student is able to investigate problems in science and to recall scientific facts or concepts.
12. Social Studies;
How well the student is able to grasp concepts, generalizations, and inquiry skills required for problem solving in social studies.

*Some tests are not available at particular grade levels.

Appendix D (Continued)

RATIONALE FOR CTBS

The Comprehensive Tests of Basic Skills, Expanded Edition were designed to measure the extent to which individual students have developed the capabilities and learned the skills that are prerequisite to studying and learning in subject matter courses, and necessary for functioning in a society based on daily use of language and number.

These basic skills are developed through exposure to a variety of curriculums and instructional procedures. Unlike tests of academic achievement in a particular subject area, these tests of basic skills are not greatly affected by the particular content material used to teach the students. Performance on these tests is affected, however, by the grade level at which topics are introduced into the curriculum and by the development of the capabilities necessary to perform the task. The tests were developed on the assumption that a student's competence in dealing with content of high complexity increases as he progresses through school. The validity of this assumption was tested in item tryouts on a national sample.

The measurement of these skills and abilities cannot be divorced entirely from the measurement of knowledge acquired through schooling, but it is not the intent of these tests to measure this knowledge directly. The emphasis in this series is on the measurement of the grasp of broad concepts and abstractions as developed by all curriculums, and on facility in the skills that are required in the effective use of language and number such as classifying, manipulating, translating, and interpreting.

The complete classification scheme for the rationale was developed with the view that it would be understood by teachers and could be used to determine major strengths and weaknesses in terms of instructional objectives and content. The scheme is so arranged that there is an inherent hierarchy of skills, or levels of thinking, consistent with what is currently known about child development, cognitive structures, and learning processes.

In the development of the tests, attention was given to long-term trends in curriculum such as contemporary mathematics programs and the linguistic approach to the teaching of language arts. Items reflecting these trends were used only when there was reasonable expectation that students in traditional curriculums would understand them. Items were excluded that could not be assumed to be based on common experience.